

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Skype Communications S.A.R.L.)	
)	RM - 11361
Petition to Confirm a Consumer's Right)	
to Use Internet Communications Software)	
<u>and Attach Devices to Wireless Networks</u>)	

SPRINT NEXTEL CORPORATION COMMENTS

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EXECUTIVE SUMMARY

Skype Communications S.A.R.L. (“Skype”) has proposed two radical changes to the current regulatory regime governing the provision of Commercial Mobile Radio Services (“CMRS”) and wireless broadband information services: (1) application of the 1968 *Carterfone* decision¹ to wireless networks and devices; and (2) limitations on the ability of wireless carriers to manage their broadband networks. Skype has failed, however, to demonstrate why the imposition of these monopoly era regulations is necessary.

Wireless carriers, wireless broadband networks and wireless handset manufacturers are three of the most highly competitive areas in telecommunications. The light regulatory framework established by the Congress and the Federal Communications Commission (“Commission”) has been an unprecedented success, which has resulted in falling consumer prices, new services, increased handset options and increased spectrum efficiency. Skype provides no evidence that the market is failing to address consumer needs.

The Skype *Carterfone* proposal appears to be based upon a fundamental misunderstanding regarding the manner in which wireless networks operate. Unlike traditional wireline devices, today’s wireless handsets are an integrated part of the wireless network. Technical choices made regarding handset operation have an impact not only the cost of operating the network but also the quality of service available to other consumers. Accordingly, an important basis of competition within the wireless carrier market is the choices made with respect to handset operation and the resulting impact on

¹ *In the Matter of the Carterfone Device in Message Toll Telephone Service*, Decision, FCC 68-661, 13 F.C.C.2d 420 (1968) (*Carterfone*).

quality of service, network cost, spectrum efficiency and technology innovation.

Skype's proposal regarding broadband services reflects the same misunderstanding regarding the traffic sensitive nature of spectrum and the importance of carrier control over current broadband networks. Wireless carriers are not attempting to control the content customers access over their networks, they are attempting to control quality of service and network costs for all customers.

If Skype's proposal were implemented, the Commission would be eliminating many of the grounds upon which carriers currently compete. Without the ability to specify the types of handsets and applications used on their networks, carriers would lose the ability to control operational costs, ensure quality of service or promote new services and technologies. Simultaneously, the Commission would be undermining its ability to impose many of the social regulatory obligations it now requires of carriers.

Sprint Nextel Corporation urges the Commission to reject Skype's request for a new regulatory regime governing competitive wireless networks.

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COMMENTS OF SPRINT NEXTEL CORPORATION

The Federal Communications Commission (“Commission”) should reject Skype Communications S.A.R.L.’s (“Skype’s”) attempt to impose monopoly era regulation on the competitive wireless services industry.² Wireless services have been both an “amazing story” and the “poster child for competition.”³ Despite this, Skype proposes at least two radical changes to the current successful regulatory structure: (1) application of the 1968 *Carterfone* decision⁴ to wireless networks and devices; and (2) limitations on the ability of wireless carriers to manage their broadband networks. Both of these proposals are based upon a fundamental misunderstanding of the manner in which wireless networks operate and the current state of wireless competition. Congress and the Commission established a policy of light regulation of the wireless industry that has been a tremendous success. The Commission should not now abandon that success.

² Petition to Confirm a Consumer’s Right to Use Internet Communications Software and Attach Devices to Wireless Networks, filed February 20, 2007. Consumer and Governmental Affairs Bureau Public Notice issued February 28, 2007 (“*Carterfone* Petition”).

³ Presentation of Commissioner Kevin J. Martin, *Wireless and Broadband: Trends and Challenges*, Dow Lohnes-Comm Daily Speaker Series, at 1 (Oct. 14, 2004)(“Martin Dow Lohnes Presentation”).

⁴ *In the Matter of the Carterfone Device in Message Toll Telephone Service*, Decision, FCC 68-661, 13 F.C.C.2d 420 (1968) (*Carterfone*).

I. THE WIRELESS CARRIER MARKET, THE WIRELESS HANDSET MARKET, AND THE WIRELESS BROADBAND MARKET ARE ALL HIGHLY COMPETITIVE

Skype's *Carterfone Petition* is premised on the existence of a market failure which requires government intervention. There is no evidence, however, of a market failure. Skype observes that wireless carriers "are beginning to aggressively ... influence"⁵ the products and services they offer the public and bemoans the fact that certain products that it believes would be popular in the marketplace are not currently being offered. However, Skype provides no evidence that carrier behavior is not being controlled by market forces, nor could it. The wireless carrier market, the wireless handset market and the wireless broadband market are all highly competitive.

The Commission confirmed the competitive nature of the wireless market as recently as September of 2006. In the *11th Annual Competition Report*, the Commission concluded "that there is effective competition in the CMRS marketplace."⁶ Moreover, this competitive pressure "continues to drive carriers to introduce innovative pricing plans and service offerings, and to match the pricing and service innovations introduced by rival carriers."⁷ Notably, the Commission observed that competition demonstrated itself not only in price and service competition, but in the development of new technology. "[T]he deployment of next-generation networks based on competing technological standards continues to be an important dimension of non-price rivalry in

⁵ *Carterfone Petition* at i.

⁶ *In the Matter of Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, Eleventh Report, WT Docket No. 06-17, FCC 06-142 (September 29, 2006) ("*Eleventh Annual Competition Report*") at ¶2.

⁷ *Id.* at ¶3.

the U.S. mobile telecommunications market.”⁸ It is precisely this type of technology competition, however, that Skype seeks to eliminate, urging the Commission to return to a standardized network with government-mandated operating protocols.

Skype argues that there has been significant consolidation in the industry that has led to an “oligopoly” in the wireless market and that this change “calls into question” the FCC’s 1992 *Bundling Order*.⁹ This statement is puzzling at best when the competitive state of the industry is compared between 1992 and today. In 1992, the FCC acknowledged that the wireless market was a regulatory duopoly, but found, nonetheless, that there was sufficient competition in both the carrier market and the handset market to permit carriers to bundle services and devices. *Skype* is absolutely correct that the wireless market has changed dramatically since 1992.

Since the 1992 *Bundling Order*, the number of wireless carriers providing service to consumers has increased dramatically. Ninety-eight percent of the United States population now has three or more facilities-based carriers from which to choose, up slightly from last year and up from 88% in 2000, the first year the Commission maintained these statistics.¹⁰ Ninety-four percent of the total U.S. population has four or more carriers from which to choose and fifty one percent have five or more mobile telephone operators competing to offer service.¹¹ To place this in perspective, in 1992 no American had more than two carriers from which to choose and a large portion of the

⁸ *Id.*

⁹ Carterfone Petition at p.21, citing *Bundling of Cellular Customer Premises Equipment and Cellular Service*, Report and Order, CC Docket No. 91-34, FCC 92-207, 7 FCC Red 4028 (1992)(“*Bundling Order*”).

¹⁰ *In the Matter of Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, Eleventh Report, WT Docket No. 06-17, FCC 06-142 (Sep. 29, 2006) (“*Eleventh Annual Competition Report*”)

¹¹ *Eleventh Annual Competition Report* at ¶41.

population did not have access to wireless services of any kind.

There are now more than 180 facilities-based wireless carriers and this number does not include resellers, MVNOs and other alternative providers (e.g., WiFi).¹² Coverage has expanded from a mere 10,000 cell sites in 1992 to almost 200,000 cell sites as of the end of 2006.¹³ Minutes of use have increased from a few thousand minutes in 1992 to almost two trillion minutes during 2006.¹⁴ As usage and demand have increased, the price of service has steadily dropped.¹⁵ The average local monthly bill has decreased from \$68.51 in 1992 to \$50.56 as of the end of 2006.¹⁶ All of these statistics demonstrate the existence of a robust and competitive market.

As Chairman Martin has observed, a federal deregulatory approach to the wireless market has resulted in “an amazing story.”¹⁷ At the time the 1993 Budget Act was enacted, wireless was an “elite or niche service,” it was used by “only 16 million people,” it was “primarily a local service,” and this “local service was expensive.”¹⁸ Today, in contrast, wireless has become “a more national service” and “the poster child for competition.”¹⁹ Indeed, CTIA – The Wireless Association estimates there are now more than 233 million wireless subscribers.²⁰

The handset market is likewise flooded with alternative vendors offering almost

¹² See www.ctia.org/media/industry_info/index.cfm/AID/10323, checked April 10, 2007.

¹³ See http://files.ctia.org/pdf/CTIA_Survey_Year_End_2006_Graphics.pdf, checked April 10, 2007.

¹⁴ *Id.*

¹⁵ The decrease in pricing is notable in comparison to non-competitive markets such as wireline special access in which pricing has failed to decrease. See Government Accountability Office Report to the Chairman, Committee on Government Reform, House of Representatives, “*FCC Needs to Improve Its Ability to Monitor and Determine the Extent of Competition in Dedicated Access Services*,” November 2006 (“GAO Report”).

¹⁶ See *supra* note 13.

¹⁷ See Martin Dow Lohnes Presentation at 1.

¹⁸ *Id.*

¹⁹ *Id.* at 1-2 and 6-7.

²⁰ See *supra* note 12.

every conceivable combination of devices. Sprint Nextel alone offers more than forty different handset models, manufactured by ten different handset manufacturers. Every carrier attempts to offer handset models that are more enticing than those of its competitors. Cingular for example, had great success with the Motorola “RAZR” and Verizon has aggressively marketed the “Chocolate.” If one particular form factor proves successful in the marketplace, then other manufacturers hurry to imitate. Thus with the success of the RAZR, Samsung introduced “slim” phones, such as the Samsung A900.

Finally, although still developing, the broadband marketplace generally, including wireless broadband services, is also highly competitive. Tremendous capital investment is being placed into cable modem, digital subscriber line (“DSL”), fiber optic, wireless broadband over CDMA 2000 evolution data only (“EvDO”), wireless broadband over WiMAX, wireless broadband over WiFi, and soon broadband over power lines (“BPL”). Most of these services are competing to provide broadband services to consumers today and the number of market participants is rapidly increasing as investors rush to meet customer demand.

With respect to wireless broadband specifically, competition is as fierce as it is on current voice networks.²¹ Sprint Nextel Corporation, the leader in wireless broadband data, has deployed CDMA 2000 EvDO over a footprint covering more than 200 million people and is in the process of developing and deploying a WiMAX data network that will provide data speeds of 2 to 4 Mbps. Verizon Wireless has deployed an EvDO network almost as large Sprint. Although not as fast as Sprint Nextel’s broadband

²¹ However, as Sprint Nextel has stated on numerous occasions, this competition could be greatly enhanced by appropriate regulation of monopoly controlled special access facilities. *See* Testimony of Barry West, Chief Technology Officer and President, 4G Mobile Broadband, Sprint Nextel Corporation, Before the House Subcommittee on Telecommunications and the Internet, April 19, 2007.

service, AT&T wireless services has deployed EDGE technology over much of its footprint and provides broadband data in some select markets.²² T-Mobile has deployed an extensive WiFi network and is in the process of deploying broadband services over its newly acquired AWS spectrum.²³ Similarly, smaller niche players are developing their own varieties of wireless broadband service. Clearwire, for example, has deployed wireless broadband services in many markets and has announced plans to expand their coverage.²⁴

In fact, the broadband market, when compared to the fledgling wireless industry of 1992, is much farther advanced, with multiple carriers already competing to provide service and continuing to make tremendous investment devoted to expansion of these networks. In 1992, the Commission found that the existence of two carriers in most markets was sufficient competition to permit the bundling of services and devices. In today's wireless broadband market, consumers already have three or four alternative providers from which to choose.

All three markets implicated by Skype's *Carterfone Petition* are intensely competitive. Carriers are competing on the basis of price, coverage, service quality, data speeds, and handset models. Carriers are providing new innovative technologies and responding to market pressures. In this context, it is difficult to see why Skype would seek a radical departure from the existing regulatory structure and instead ask the Commission to return to the regulatory construct of the original AT&T monopoly. While limited network innovation and reduced competition may be beneficial to applications

²² See <http://business.cingular.com/businesscenter/plans/connections-coverage.jsp>

²³ See http://www.t-mobile.com/shop/addons/services/information.aspx?osid=4745E503-3612-4E0F-9044-DE881A7F91CC&tp=Svc_Tab_HotSpot

²⁴ See <http://www.clearwire.com/wireless-broadband/overview.php>.

providers such as Skype, it has utterly failed to explain how this would benefit consumers.

II. WIRELESS HANDSETS ARE AN INTEGRATED PART OF THE WIRELESS NETWORK

Not only does Skype's Petition fail to explain how the current competitive wireless market is comparable to the monopoly telecom market of 1968 or the duopoly of 1992, but it demonstrates a basic lack of technical knowledge regarding the manner in which wireless networks operate.

The suggestion that the *Carterfone* principles could simply be applied to wireless phones in the same manner they are applied to the traditional landline network ignores the reality that wireless handsets are an integrated and living part of the network. The technical specifications and software designs of wireless handsets have a direct impact on the manner in which the network is constructed and how services are provided. Furthermore, the operation of each handset effects the operation of other handsets in the same area and the network as a whole. Finally, because the wireless network is vastly more traffic sensitive than the wireline network, capital spending and construction have a direct correlation to the types of handsets being served.

More sophisticated users understand that different carriers use different air-interfaces. Thus, Cingular and T-Mobile phones cannot interface with the Sprint Nextel or Verizon networks because they are designed to operate on the Global System for Mobile ("GSM") standard and not Code Division Multiple Access ("CDMA") or integrated Dispatch Enhanced Network ("iDEN") standards. What most users do not realize, however, is that the distinctions between networks does not stop with the air interface chosen. Every carrier has an incentive to attempt to maximize the efficiency of

its network and provide a superior product to its customers. This has resulted in each carrier making its own choices regarding the best manner to maximize the performance of the network, including the types of handsets used and the functionality of those handsets. Thus, carriers make different choices with respect to power control, voice coding systems (“vocoders”), over-the-air software controls, and numerous other systems that involve the wireless handset.

The Commission expressly adopted this technological neutrality when it eliminated the original AMPS standard,²⁵ and carriers have aggressively competed with one another to build more efficient and cost effective networks since that time. This competition, in turn, has led to rapid leaps in technology, gains in efficiency, and reduced prices to consumers.²⁶ Undoing this technology competition would be operationally impossible and would eliminate the market forces which have produced dramatic technology advances over the past several years. It is not possible for the Commission to now unscramble the technology egg.

In order to understand the integrated nature of wireless devices and networks, it is necessary to provide some detailed discussion of the technology and the manner in which devices and the network operate. The following are only a few examples of the ways in which carriers use handset and device specifications to maximize the operation of their networks, and why those choices are different for different carriers.

²⁵ *In the Matter of Amendment of Parts 2 and 22 of the Commission's Rules to Permit Liberalization of Technology and Auxiliary Service Offerings in the Domestic Public Cellular Radio Telecommunications Service*, Report and Order, Gen. Docket 87-390, 3 FCC Rcd 7033 (1988).

²⁶ This competition among technology compares favorably to the European model in which regulators required a standard GSM interface. Europe is now in the process of converting to the CDMA technology for its broadband deployment in part because CDMA was proven to be more efficient in the competitive U.S. marketplace.

A. Power Control

CDMA technology transmits the same signal to all handsets. The handsets then use special algorithms to determine what embedded message is intended for that specific device. It is vastly more efficient than other technologies because it strictly controls the amount of power being used by any individual handset at a given time, thus leaving more spectrum available for other calls. As one commenter observed, the CDMA system “depends on an exquisite dance of ... automatic gain controls and instant power regulation.”²⁷ Handsets and base stations are in constant communication, adjusting power levels many times each second to ensure that all end users are appropriately served.

Power control is critical because the operation of one handset can affect the power available to support other handsets being served on the same cell site (the total power a cell site can transmit is fixed). As more power is drawn from the base station, the actual service area or geographic footprint of that cell site decreases (this is sometimes referred to as breathing). The more efficient the power control, the more users the cell site can maintain without experiencing dropped or blocked calls. In addition, the more efficient the power control, the larger the geographic coverage the cell site can maintain. In other words, power control directly impacts the number of cell sites a carrier must construct to provide a given level of service quality.

As CDMA technology has advanced, power control has become increasingly efficient. This increased efficiency in power control has allowed carriers to maintain coverage for a given number of end users with fewer cell sites, reducing the cost of

²⁷ *The Wireless Wars*, by George Gilder, *The Wall Street Journal* (April 13, 2007).

providing service. These cost reductions have in turn been passed onto consumers in the form of lower rates. In order to obtain the benefits of increased power control, however, both the handset and the base station must be upgraded. Accordingly, carriers can only make the transition to a more efficient network if they are able to control the types of handsets made available to their customers. This is typically done by transitioning handset inventory from one technical standard to the next without disrupting service to the existing customer base.

From the customer's perspective, there is no obvious reason to purchase a handset with more efficient power control. The handset will not have improved voice quality or be subject to fewer blocked or dropped calls as to that particular customer. These benefits are only obtained as the base of customers as a whole moves to the new standard. Moreover, the new handsets are likely to be more expensive. Until economies of scale are reached, the earlier versions of new chipsets are consistently more expensive than the previous generation. Accordingly, carriers can only drive this more efficient technology by controlling the specific handsets they will permit to be used on their networks. Moreover, a carrier must be able to subsidize the new, higher cost chipsets to ensure that the appropriate economic incentive is provided to the consumer to purchase the newer version as the carrier eliminates its inventory of older handsets.

Skype would freeze this technological progression and eliminate the economic incentives to provide efficient service. Rather than allowing carriers to deploy more spectrum efficient technologies through control of handset specifications, Skype would have carriers maintain a static network and turn control of handset design over to manufacturers. Manufacturers, however, would have no economic incentive to produce

more spectrum efficient phones or lower the costs of operating the network.

On the contrary, manufacturers would presumably prefer to produce handsets with lower costs (i.e., handsets with the older, cheaper chipset) that could be sold at higher margins. The customer would not know that she was being disserved because there would be no apparent correlation between handset performance and the cost of the phone. Indeed, manufacturers may have an incentive to produce phones that provide better performance to an individual consumer (through increased power levels) but which degrade the performance of the network for other consumers. In the meantime, carrier costs would skyrocket as more cell tower construction was demanded to provide service quality to customers, resulting in rising consumer prices.

It should also be noted that not all carriers will choose to deploy new power control technology at the same time. Indeed, each carrier has an economic incentive to determine the best transition period based upon their particular market niche. Thus, a rural carrier with lower population density may better serve its customers by retaining the older technology for a much longer period. These carriers may not choose to upgrade as often or as quickly as carriers that serve dense urban markets where spectrum efficiency is most critical.

B. Vocoders

Another means of increasing network efficiency is to compress voice into packetized data. Within each handset is a device that assigns a number to various sounds received from the speaker (the voice coder or vocoder). This can be thought of as a dictionary of sounds to which numbers have been assigned. These numbers are transmitted in digital form to the network, where they are compared to the same list of

sounds contained in the switch architecture. The voice is decoded and then sent in standard Time Division Multiplexing or TDM format to the Public Switched Telephone Network. The network and the handset must be designed to ensure that the vocoders in the handset and the decoders in the network are operating in the same manner, for example, that they use the same data speeds.

When first deployed, CDMA technology used 13Kb to deliver vocoder information. As carriers pressed to squeeze more capacity out of limited spectrum resources, however, the technology was developed to provide a similar voice quality using an 8Kb vocoder. These more efficient vocoders, which were required in both the network and in the handset, allowed carriers to significantly increase the number of calls a single cell site could manage. This in turn reduced the need for cell site construction, allowed expanded coverage with less capital expense, and reduced prices to consumers.

As with power control, this transition was only possible because carriers were able to control the introduction of 8Kb vocoders into their distribution chain and ensure that only 8Kb vocoders were allowed onto the network on a going forward basis. If carriers had not been allowed to provide the specifications for the handsets they sold for use on their network, consumers could have continued purchasing and using 13Kb vocoders indefinitely. Indeed, 13Kb phones would probably have been less expensive than 8Kb phones. Given that network efficiency gains are transparent to any single user, the customer would have seen no reason to purchase the newer model. This would have changed the entire cost structure of the network and the resulting cost benefits to consumers as a whole.

Vocoder advances have continued and various carriers have implemented

different deployment strategies depending upon their particular market needs. Accordingly, many carriers have now deployed Enhanced Variable Rate Coders (“EVRC”) and Selectable Mode Vocoders (“SMV”) into their handsets which allow them to change the vocoder rates used by the handset depending upon demand on any particular cell site. This gives the wireless carrier the ability to expand network capacity as demand requires and compensate for areas with less robust coverage. Again, this evolution of capacity control and network operation is directly tied to control over the handset.

Not all carriers implement these new technologies in the same way. For example, it is Sprint Nextel’s understanding that the default settings for Sprint Nextel CDMA vocoders, as well as the operating controls within the Sprint network, are different from those used by Verizon Wireless. As a result, Verizon Wireless handsets do not operate as efficiently on the Sprint Nextel network as they do on the Verizon network and can demand additional resources. Without the ability to control the base of handsets interacting with the network, Sprint Nextel could no longer optimize its network.

C. Over-The-Air Service and Provisioning

Another common misconception regarding wireless phones is that they are static devices that do not change once purchased and provisioned. In fact, wireless handsets are constantly being updated through the network. These updates might be provided to correct service problems identified in existing software, add new services not previously supported by the carrier, identify new radio channels the carrier has deployed, and update the most current roaming partners available for coverage.

Originally, these updates were performed using a cable attached to a computer,

also known as over-the-wire (OTW). This was an expensive and time consuming process which increased costs to the consumer and created a poor user experience. Accordingly, carriers began developing means of providing these updates through radio transmission to the handset. This feature was known as over-the-air service and provisioning (“OTASP”) and was incorporated into new handset designs. This feature greatly improved the customer experience and allowed updates to be provided in a more efficient manner. OTASP, however, also gradually became obsolete. While more effective than OTW, it was prone to failures. As a result, Sprint Nextel began converting handsets to an internet over-the-air (“IOTA”) standard, which increased capacity and reliability of over-the-air transmissions. Sprint Nextel currently performs more than a 300,000 pushes using IOTA every day.

Each of these improvements in provisioning reduced costs and improved the customer experience. They were only possible, however, because Sprint Nextel could specify the technical parameters of the handsets operating on their network. Both the network and the handset must be designed to accommodate the new system. These modifications were the result of individual carrier choices regarding the best practices for managing their networks, balancing cost and benefit with available capital to determine the most appropriate path. Each carrier did not make the same choices. Accordingly, Sprint Nextel has deployed a different over-the-air system than Verizon Wireless. Accordingly, despite the fact that both are operating on CDMA networks, Verizon Wireless handsets cannot support Sprint Nextel’s IOTA standard and Sprint Nextel handsets do not support Verizon Wireless’ over-the-air interface.

These are merely a few examples of the ways in which handsets are integrated

into the network and how carriers choose different technology paths in an attempt to outperform their competitors. None of these improvements would have occurred if carriers did not have the ability to specify the design parameters of their handsets. No individual consumer would see an advantage in buying handsets that are more efficient. In fact, the incentive would likely be just the opposite. Older handset models, which had already benefited from economies of scale, would likely be less expensive.²⁸ As a whole, however, costs to consumers have been reduced as a result of carrier's ability to bundle devices and services. Furthermore, the increased network efficiencies that Sprint Nextel has achieved have enabled it to introduce new, innovative services and technologies that would not have been possible with prior models.

Skype's proposed application of the *Carterfone* rules would radically alter the cost structure of wireless networks and undermine the benefits of competition. Rather than multiple carriers competing to develop the most efficient technologies, carriers would become stagnant networks with increasing costs which they could not control. Manufacturers would sell handsets to consumers based on individual performance and without regard to network consequences. Customers would experience decreasing network performance and increasing rates, all in the name of an alleged shortfall in device innovation.

²⁸ This is another reason it is important carriers have the ability to subsidize handsets, thus providing the correct incentive to the customer base to purchase more efficient handsets.

III. THE COMMISSION HAS ADDRESSED THE DEVICE ISSUE AND RESOLVED IT CORRECTLY

A. The 1992 Bundling Order Is Still Valid

In 1992, the Commission was faced with the question of whether it should modify its policy governing the bundling of cellular customer premises equipment (CPE) and cellular service. After analyzing the market conditions for both wireless carriers and handset vendors, it concluded that it would “allow cellular CPE and cellular service to be offered on a bundled basis, provided that cellular service is also offered separately on a nondiscriminatory basis.”²⁹ The Commission based its decision to approve the bundling of services and devices on an analysis of network competition and handset competition available at that time. As discussed at length above, the competitiveness of both markets has only increased since that original decision and Skype has provided the Commission no reason to reverse itself.

The Commission’s bundling decision has been an unqualified success. While customers are free to purchase handsets and services separately, the overwhelming majority of Americans choose to purchase bundled services. This is because bundled services provide real benefits that the Commission recognized in 1992 and that continue to be applicable:

[T]he record supports a finding that the high price of CPE represents the greatest barrier to inducing subscription to cellular service. Thus, as several of the commenters, including the DOJ, have pointed out, bundling is an efficient promotional device which reduces barriers to new customers and which can provide new customers with CPE and cellular service more economically than if it were prohibited.³⁰

In analyzing the handset market, the Commission observed the record was

²⁹ *In the Matter of Bundling Cellular Customer Premises Equipment and Cellular Service*, Report and Order, FCC 92-207, 7 FCC Rcd 4028, 4028 (1992) (“1992 Bundling Order”).

³⁰ *1992 Bundling Order*, at ¶ 19.

“uncontroverted that the cellular CPE market is extremely competitive, both locally and nationally” and that “no single manufacturer is dominant and none has a market share in excess of 20%.”³¹ The competitiveness of the handset market has only increased since 1992, as evidenced by the broad range of manufacturers and handsets offered by all carriers. As noted above, Sprint alone offers more than forty different handset models produced by ten different manufacturers. Compared to the black and grey brick of 1992, wireless handsets now come in an array of shapes, colors, sizes, and capabilities, catering to every possible market segment, from phones with menus in Spanish to children’s phones with simplified keypads.

The Commission expressed concern about the level of competition in the wireless carrier market of 1992, which then consisted of a regulatory duopoly, but noted that “even a marginal amount of facilities-based competition will foster public benefits of diversity of technology, service and price.”³² The minimal competition of 1992 has now flourished into the dramatic competition of 2007 – four national carriers, Sprint Nextel, Verizon Wireless, T-Mobile and AT&T; several large regional carriers, Alltel, USCellular, Leap wireless; and hundreds of MVNOs, resellers and small facilities-based carriers.

Despite its concerns that competition was limited at the time, the Commission found there was little chance that carriers could charge supra-competitive prices on CPE or otherwise control the CPE market:

[W]e agree with the FTC Staff’s conclusion that “if individual cellular service companies do not possess market power in the sale of cellular service on a national level, it is unlikely that foreclosure of the CPE market can be successful.”

³¹ *Id.* at ¶ 9.

³² *1992 Bundling Order*, at ¶ 11.

The possibility that one carrier could dominate the CPE market is further diminished by the fact that most carriers do not manufacture CPE and because most cellular service markets are duopolistic rather than monopolistic, a carrier's market power is attenuated.³³

These factors are even more applicable today than they were in 1992.

Finally, the FCC noted that the marketing practice of packaging CPE and cellular service “has existed for several years and has benefited consumers.”³⁴ Once again, this statement is equally applicable today. While consumers can purchase CPE and services on an unbundled basis, they overwhelmingly choose to purchase services through bundled packages which provide the benefit of lower rates and lower cost handsets. Thus, contrary to Skype's suggestion, customers are able to purchase cellular service “offered separately on a nondiscriminatory basis.” As a practical matter, however, they overwhelmingly prefer the bundled package offerings of carriers.

It further is worth noting that the Commission has reviewed the issue of CPE bundling and the justifications of the *1992 Bundling Order* and extended them to other areas of telecommunications in more recent years. Thus, in 2001, the Commission concluded that it would no longer prohibit the bundling of CPE, telecommunications services and enhanced services within the wireline world.³⁵ In reaching this conclusion, the Commission once again noted that “bundling can benefit consumers” and pointed to its decision in the *1992 Bundling Order*:

The Commission reaffirmed these benefits when it allowed cellular CPE and

³³ *1992 Bundling Order*, at ¶ 13 (footnotes omitted).

³⁴ *Id.* at ¶14.

³⁵ *In the Matter of Biennial Regulatory Review – Review of Customer Premises Equipment And Enhanced Services Unbundling Rules In the Interexchange Access and Local Exchange Markets*, Report and Order, CC Docket No. 98-183, FCC 01-98, 16 FCC Rcd 7418 (2001)(“*1998 Biennial Review Order*”)(it is also worth noting that the wireline world is significantly less competitive than the wireless world on which Skype seeks to impose these bundling prohibitions).

cellular service to be offered on a bundled basis. It found, in particular, that the price of cellular CPE represented the greatest barrier to inducing subscription to cellular service and that bundling could be used as an “efficient distribution mechanism” and an “efficient promotional device” that allows consumers to obtain service and equipment “more economically than if it were prohibited.”³⁶

Skype has presented no evidence that would support a change in these FCC precedents. Indeed, the factual basis for these decisions has only grown stronger as competition has increased in the wireless industry.

B. *Carterfone* Is a Deeply Flawed Analogy

Carterfone was decided in the context of a vertically integrated monopoly that operated a single ubiquitous technology. AT&T not only controlled the market for telecommunications services, it controlled the market for customer CPE as well. Customers who paid for a dedicated twisted copper line to their home were prevented from attaching devices to that line, even though those devices had no impact on the operation of the network as a whole. It was against this background that the Commission established the Part 68 rules which allowed end users to connect devices to the traditional wireline network that were not otherwise harmful.

None of the factual circumstances of the *Carterfone* decision are present in the wireless industry. As outlined above, the wireless carrier market is highly competitive. Wireless carriers do not manufacture handsets, nor do they exercise market power over handset providers. Instead of a uniform network, the FCC established a regulatory regime that encouraged wireless carriers to deploy different and competing technologies.

In addition, wireless networks use a shared resource, spectrum, to provide service to customers. Wireline facilities provide a single dedicated line to the customer premises.

³⁶ 1998 Biennial Review Order, at ¶6; citing, *Bundling of Cellular Customer Premises Equipment and Cellular Service*, Report and Order, CC Docket No. 91-34, 7 FCC Rcd 4028, 4030-31, ¶19(1992).

If a wireline customer attaches a device that generates static on the line or that shorts the circuit, it generally has no impact on other users of the network. A wireless end user who uses a handset inconsistent with the carrier's specifications, however, may experience no problems on her own connections but cause disruption for other users within the same cell coverage. Every use of carrier spectrum has an impact not only on the operation of the network (e.g., the number of towers required to provide service), but also a direct impact on other customers using the same resource.³⁷

It is far too late for the United States to return to the command and control model followed by the European market. In the United States, providers purchased spectrum under the premise that they had control over their own technology; communications networks and telecommunication businesses have been built and run on the current model; hundreds of millions of 2G and 3G users are currently operating on pricing and service plans built on that model; and vendors and carriers have long-established relationships on that model. The Commission simply cannot reverse course a decade later.

IV. SKYPE'S PROPOSAL WOULD UNDERMINE CURRENT FCC REGULATORY MANDATES

In the context of wireless telecommunications service, many of the Commission's public policy goals have been achieved through mandates on carriers to sell or operate only certain types of devices on their networks. So, for example, the Commission required that carriers using a handset-based 911 location system ensure that 95% of their customer base used Global Positioning System ("GPS") enabled handsets by December

³⁷ Indeed, the Skype *Carterfone Petition* raises the question whether a carrier could meet its section 310 obligations to maintain control of its license. See *Intermountain Microwave*, 12 FCC 2d 559 (1963).

31, 2005.³⁸ Carriers are also obligated to ensure that a certain percentage of handsets sold are hearing aid compatible.³⁹ To the extent that the Commission removes carrier control over the devices used on its network, these mandates become problematic if not unenforceable.

The Commission's jurisdictional authority to mandate that equipment manufacturers install particular functionalities or comply with particular Commission public policy goals has not been tested. The Commission has never required PBX manufacturers, for example, to install location devices within the networks that serve apartment buildings or business complexes. Even assuming the Commission had such jurisdictional authority, however, it is unclear how it would be applied.

If the Commission were to mandate that all wireless phones contain GPS chipsets, for example, a large percentage of consumers would pay a significant premium for a functionality that would be operational on only some carriers' networks. In addition, the mere presence of a GPS chipset would not ensure that the location technology would function because different networks/carriers use different processes for calculating location information. For example, GPS calculations are performed within the handset on the iDEN network and on network platforms in the CDMA network. In order to accommodate Skype's proposal, the Commission would be required to abandon its prior technological neutrality on this issue.

Similar problems are likely to arise in the context of specialized services for the disabled. Most notably, many deaf, hard of hearing and speech impaired people depend on mobile, digital TTY for both emergency and non-emergency communications. The

³⁸ 47 C.F.R. §20.18

³⁹ 47 C.F.R. §20.19

Commission placed the entirety of this TTY obligation on wireless service providers,⁴⁰ yet wireless carriers cannot comply without TTY compatible handsets. Wireless carriers need to modify the vocoders in their cell sites and/or switches, but this is only half the solution because the handset – again as an extension of the wireless network – must be capable of modulating/demodulating the Baudot tones necessary for TTY communications. In short, if carriers lacked sufficient visibility into and control over the devices operating on their networks, they could not control TTY compatibility.

Finally, additional features added by manufacturers could undermine current FCC policy goals. For example, Skype alleges that Cingular failed to incorporate WiFi capability into a Nokia handset which is similar to a European model with that feature. This capability would allow consumers to run the Skype application while within a WiFi hotspot.⁴¹ It is unclear, however, how Cingular would provide location based 911 services to a phone using a WiFi hotspot when Cingular uses triangulation of cellular signals to calculate location. While Skype would presumably be responsible for providing 911 connectivity, the mobile handset would no longer have location capability (the same would be true of a customer using Skype on a Sprint Nextel phone). Other carriers may offer WiFi capability, for example T-Mobile, but only through their own network to ensure that they as a carrier can provide 911 functionality.

While the Commission may be able to balance the obligations of manufacturers and carriers, it should be aware that eliminating the ability of carriers to manage the types of handsets on their networks will make many of the Commission's existing public policy goals more difficult (or impossible) to implement.

⁴⁰ 47 C.F.R. 20.18(c)

⁴¹ *Carterfone Petition* at 14.

V. THE COMMISSION SHOULD NOT LIMIT CARRIER CONTROL OVER THEIR NASCENT WIRELESS BROADBAND INFORMATION SERVICES

Sprint Nextel has been a consistent leader in mobile data services and is at the forefront of wireless broadband deployment. Sprint Nextel now offers wireless broadband connectivity to more than 200 million people in the United States using CDMA 2000 Evolution Data Only (“EvDO”) technology. EvDO-Rev A operates at speeds of 600 Kbps to 1.4 Mbps. In addition, Sprint Nextel is investing in fourth generation (“4G”) wireless broadband utilizing WiMAX mobile technology which is expected to operate at speeds of 2 to 4 Mbps. Sprint Nextel plans to deploy 2.5GHz mobile WiMAX broadband service to an area serving 100 million people by year-end 2008, with trial markets launched later this year in Washington D.C., Baltimore, and Chicago.

Even as an industry leader, however, Sprint Nextel has only been offering wireless broadband services for a little more than two years. The deployment of its upgraded EvDO Rev A technology has not yet been completed. The uptake of broadband data cards is only beginning to accelerate. And as noted above, the WiMAX network is only in the preliminary stages of design and construction. Accordingly, it can truly be said that wireless broadband services are in their nascent stage. Yet Skype is suggesting that the government intervene with proscriptive regulation regarding the management of these networks before they are even constructed.

Government intervention at this point would only serve to disrupt investment in these new alternatives to DSL and cable before they are even deployed. Rather than promoting the benefits of competition, Skype’s proposals would in fact undermine

competition in the broadband market. It is this competition that will be the most effective means of ensuring that customers are able to obtain the broadband services they desire.

A. Capacity Management on Wireless Networks

As discussed at length above, wireless networks are extremely traffic sensitive. As a result, the actions of one user can have a direct impact on the performance of the network for other customers within the same cell site. Accordingly, if one customer is operating an application that demands intensive bandwidth, downloading movies from the internet for example, that customer draws available power away from other users within the cell. While this may not be problematic if there is little or low usage on the cell site, it would disrupt other users' applications where there is more demand for bandwidth. In order to ensure that all customers maintain a positive user experience, the carrier must maintain the ability to manage its network.

Skype offers no evidence that these network control provisions are an unreasonable practice. Indeed, Skype does not even discuss the technical operation of wireless networks. More importantly, Skype offers no evidence to suggest that competition between wireless data providers will not ensure that customers obtain the services they desire. To the extent T-Mobile or any other mobile broadband carrier is able to construct a network that allows end users greater flexibility in the services they can obtain, they will gain a competitive advantage in the market. The market will then pressure other carriers to modify their technology or lose market share. This is the appropriate means to allow technology to develop, not through mandated government standards.

B. The Application Market is Functioning Properly

The marketplace is already sorting out the potential winners and losers for application developers and operating platforms. Sprint Nextel offers handsets operating on Windows-based operating systems as well as handsets using Java. Other carriers offer handsets using BREW. Sprint Nextel offers phones that can download and operate alternative internet browsers and completely bypass Sprint Nextel's walled garden. The Palm Treo device with Windows, for example, is a completely open system that can operate the Skype program if the customer chooses. If one business model proves more popular with consumers than another, then the market will move in that direction. It is not the government's role, however, to, in effect, choose between Windows and Apple operating systems.

Wireless carriers also compete with one another through the provision of many alternative service offerings. These offerings are created in conjunction with multiple different applications providers and hardware manufacturers. For example, Sprint Nextel began offering a unique new service known as "FanView" at NASCAR races. FanView incorporates transmissions from video cameras inside race cars, audio replay and other features that greatly enhance the ability of the fan to follow a NASCAR race. The product has been enormously popular and, indeed, FanView was named one of the best new products of 2006 by Time Magazine.

The FanView service, and others like it, can be offered, however, only through the cooperative efforts of network operators (who must develop the necessary infrastructure and internal systems to support them), applications developers (who design supporting software) and manufacturers. Skype's proposal would disrupt this

cooperative process and potentially eliminate the ability of carriers to provide unique services such as this at all. A requirement that carriers act only as a “dumb pipe” would have the collateral effect of eliminating the ability of the carrier to build unique systems to support such specific specialized services. This disruption of the current applications market would reduce the services available to consumers, not increase them.

C. Carriers Control Network Operations Not Content

Skype incorrectly implies that carriers are restricting the ability of customers to access content on the internet. Skype suggests, for example, that wireless carriers developed the Wireless Application Protocol to confine users to sites of their choosing and to prevent free access to the internet. To understand the absurdity of this suggestion it is only necessary to recall the state of technology at the time WAP was developed. At that time, wireless phones generally had mono-colored displays less than two inches square, maximum data speeds of 56 Kbps and primitive browser devices. There was substantial concern whether carriers would even be able to market data services on mobile devices. WAP was developed to accommodate these limitations on wireless devices and provide customers with meaningful content. If anything, WAP is another example of the creative innovation that has been a hallmark of the wireless industry.

By making these halting first steps in data services, wireless carriers were able to begin developing consumer interest in mobile data services and create a market that had not previously existed. Wireless carriers have, however, largely developed past the early years of WAP. Sprint Nextel’s EvDO cards now offer internet speeds of 600 Kbps to 1.4 Mbps on laptop computers. Customers can use Google to search the internet and perform almost any function they would ordinarily do with a cable modem or DSL connection.

Likewise, Sprint offers phones with Windows-based software which permits a user to use any internet browser and access any content accessible on a wireless device.

Wireless carriers do, however, continue to have a legitimate need to manage the use of their network to protect other users. These controls are entirely consistent with the principles of *Carterfone*, which acknowledges that uses which adversely impact other users can be constrained. Thus limits on access to certain sites, such as streaming video etc., which would degrade system performance for other users, are appropriate in the wireless environment.

CONCLUSION

For all of the above-mentioned reasons, Sprint Nextel Corporation requests that the Commission reject Skype Communications' call for monopoly era regulation of the competitive wireless industry.

Respectfully submitted,

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